

Figure 1
Site Location Map
Bainbridge Island Landfill CAP

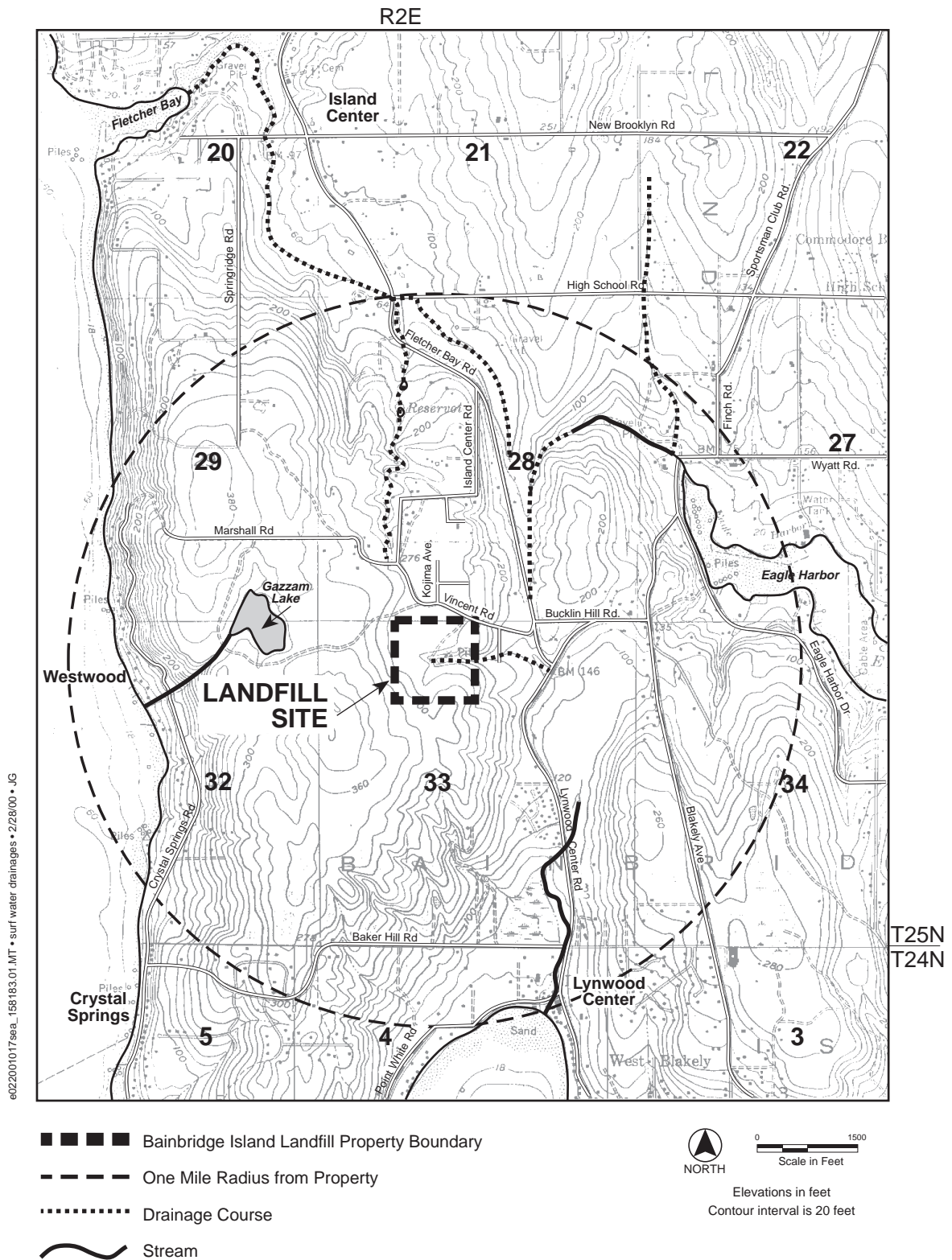
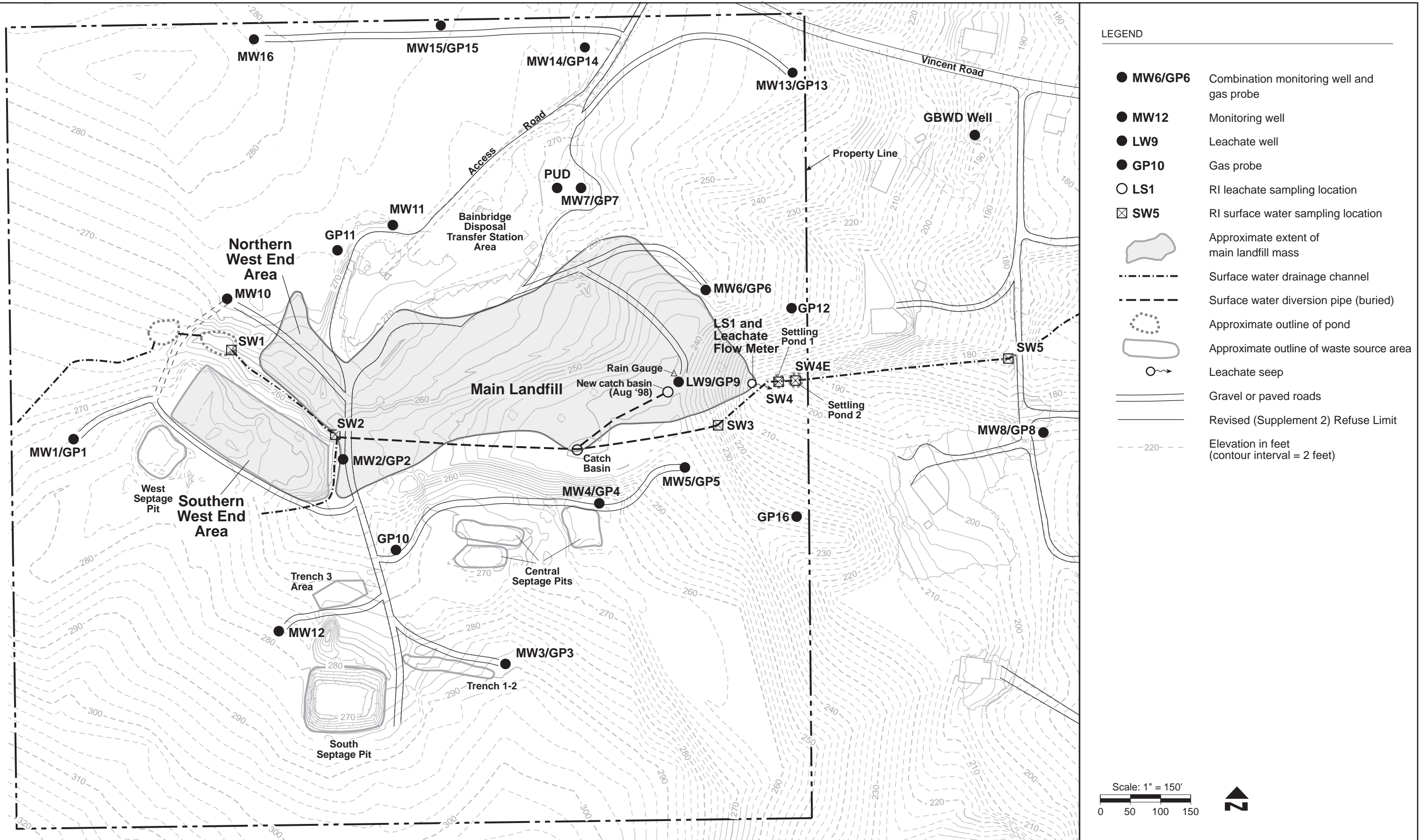


Figure 2
Regional Topography and
Surface Water Drainages
Bainbridge Island Landfill CAP



Note: Outlines of waste areas and transfer station are approximate.

Figure 3
Site Plan
Bainbridge Island Landfill CAP

Table 1
BAINBRIDGE ISLAND LANDFILL CAP
Contaminants of Concern and Proposed Cleanup Levels

Parameter Group	Contaminant	Soil		Septage Pits	Sediment	Surface Water	Groundwater
		Trench 3 Base Soil	MLF & WEA (Inert & Cover soil)				
VOCs							
	1,4-dichlorobenzene			182 ug/kg			
	1,1-dichloroethene						0.073 ug/L
	vinyl chloride						0.023 ug/L
SVOCs							
	benzo(a)anthracene		137 ug/kg	137 ug/kg	137 ug/kg		
	benzo(a)pyrene	137 ug/kg	137 ug/kg	137 ug/kg	137 ug/kg		
	benzo(b)fluoranthene	137 ug/kg	137 ug/kg	137 ug/kg	137 ug/kg		
	benzo(k)fluoranthene		137 ug/kg	137 ug/kg			
	carbazole		50,000 ug/kg				
	chrysene		137 ug/kg	137 ug/kg	137 ug/kg		
	dibenzo(a,h)anthracene		137 ug/kg		137 ug/kg		
	indeno(1,2,3-cd)pyrene	137 ug/kg	137 ug/kg		137 ug/kg		
	naphthalene		32,000 ug/kg				
	pentachlorophenol		8,333 ug/kg				
TPH							
	diesel-range			200,000 ug/kg			
	heavy oil-range			200,000 ug/kg	200,000 ug/kg		
Metals							
	arsenic		7,300 ug/kg	7,300 ug/kg	7,300 ug/kg		
	beryllium				610 ug/kg		
	cadmium			40,000 ug/kg			
	chromium		100,000 ug/kg				
	copper		2.96E+6 ug/kg	2.96E+6 ug/kg		1.8 ug/L dissolved	
	iron		5.87E+7 ug/kg		5.87E+7 ug/kg	1.0 mg/L total	
	lead		250,000 ug/kg	250,000 ug/kg		1.0 ug/L dissolved	
	manganese					0.3 ug/L dissolved	
	mercury		24,000 ug/kg	24,000 ug/kg			50 ug/L
	selenium		400,000 ug/kg	400,000 ug/kg			
	zinc		2.40E+7 ug/kg	2.40E+7 ug/kg		21 ug/L dissolved	
Pesticides/PCBs							
	4,4'-DDD			4,167 ug/kg			
	Aldrin		59 ug/kg				
	Dieldrin			63 ug/kg			
	Aroclor 1254		1,600 ug/kg	1,600 ug/kg			
	Total PCBs		130 ug/kg	130 ug/kg			
Conventionals							
	alkalinity					20 mg/L	
	conductivity (indicator)						indicator ^a
	dissolved oxygen					> 9.5 mg/L	
	fecal coliform					< 50 CFU/100 mL	
	nitrate (and nitrite + nitrate)						
	pH (indicator)						indicator ^a
	total coliform					< 50 CFU/100 mL	
	turbidity					5.0 NTU	

a Secondary drinking water standard for conductivity is 700 umhos/cm; for pH, 6.5-8.5

MLF = main landfill

WEA = west end area

For source of cleanup level, see associated ARARs tables in Appendix B.

TABLE 2
BAINBRIDGE ISLAND LANDFILL CAP
 Chemical-Specific ARARs by Environmental Media

ARARs	Source
Soil	
Washington MTCA Method A and B Cleanup Levels for Soil	WAC 173-340
Washington MTCA Method B Cleanup Levels for Protection of Groundwater (Volatile organic compounds only)	WAC 173-340
Natural Background Soil Metals in the Puget Sound	Ecology Pub. #94-115
Sediment	
Washington MTCA Method B Cleanup Levels for Soil	WAC 173-340
Washington MTCA Method B Cleanup Levels for Protection of Groundwater (Volatile organic compounds only)	WAC 173-340
Natural Background Soil Metals in the Puget Sound	Ecology Pub. #94-115
Washington MTCA Method B Cleanup Levels for Protection of Surface Water	WAC 173-340
Air	
Washington MTCA Method B Cleanup Levels for Air	WAC 173-340
Washington State Minimal Functional Standards for Landfills	WAC 173-304-460
Puget Sound Clean Air Agency Regulations	Regulations I and III
Surface Water	
Washington Water Quality Standards for Fresh Water, Chronic (FWC ST)	WAC 173-201A
Washington Water Quality Standards for Fresh Water, Acute (FWA ST)	WAC 173-201A
Federal Water Quality Criteria for Surface Water, Fresh Water Chronic (FWC FED)	40 CFR 131
Federal Water Quality Criteria for Surface Water, Fresh Water Acute (FWA FED)	40 CFR 131
Groundwater	
Federal Maximum Contaminant Level (MCL)	40 CFR 141 and 142
Federal Secondary MCL	40 CFR 141 and 142
Washington State Primary MCL	WAC 246-290
Washington State Secondary MCL	WAC 246-290
Washington MTCA Method B Cleanup Levels for Groundwater	WAC 173-340

TABLE 3
BAINBRIDGE ISLAND LANDFILL CAP
 Potential Location-Specific ARARs

Source/Citation	Requirement	Prerequisite(s)	Designation
Floodplain			
Federal Executive Order 11988 Protection of Floodplains (40 CFR 6, Appendix A)	Take action to avoid adverse effects, minimize potential harm, restore and preserve natural and beneficial values of the floodplain	Action that will occur in a floodplain (i.e., lowlands, and relatively flat areas adjoining inland and coastal waters and other flood-prone areas)	Not an ARAR
Federal and state, Criteria for MSWLFs 40 CFR 258.11 WAC 173-351-130(3)	Demonstrate that the unit will not restrict the flow of the 100-year flood, reduce the temporary water storage capacity of the floodplain, or result in washout of solid waste so as to pose a hazard to human life, wildlife, land or water resources OR close by 10/9/96.	MSWLFs located in 100-year floodplain	Not an ARAR
Wetlands			
Federal Executive Order 11990 Protection of Wetlands (40 CFR 6, Appendix A)	Take action to minimize the destruction, loss, or degradation of wetlands	Wetland as defined by Executive Order 11990, Section 7	Not an ARAR
Federal, Clean Water Act (33 U.S.C. Section 404)	Take action to avoid or minimize the destruction, loss, or degradation of wetlands and surface water bodies	Disposal of dredge and fill material into waters of the United States	Not an ARAR
Shoreline Management Act of 1971 WAC 173-16	Compliance with City of Bainbridge Shoreline Master Program	Action within 200 feet of a shoreline or affecting an associated wetland	Not an ARAR
Sensitive Habitat			
Migratory Bird Treaty Act of 1973 16 USC Section 1531 et.seq.	Take action to protect habitat for migratory birds against pollution, detrimental alteration, or other environmental degradation.	Determination of the presence of migratory birds	Not an ARAR unless U.S. Fish and Wildlife Service determines that the Landfill is a habitat for migratory birds.
Endangered Species Act of 1973 16 USC Section 1536 et.seq 50 CFR 200 60 CFR 402	Take action to conserve endangered species, including consultation with DOI.	Determination of effect upon endangered or threatened species or its habitat.	Not an ARAR unless U.S. Fish and Wildlife Service determines that land is critical habitat for endangered species.

TABLE 3
BAINBRIDGE ISLAND LANDFILL CAP
 Potential Location-Specific ARARs

Source/Citation	Requirement	Prerequisite(s)	Designation
Washington State Department of Fish and Wildlife Priority Habitats and Species List	Priority habitats and species are priorities for conservation and management.	Listed as priority habitat and species.	To be considered.
Shorelines			
Fish and Wildlife Coordination Act (16 USC 661 et seq.) 40 CFR 6.302 (g)	Take action to protect fish or wildlife	Diversion, channeling, or other activity that modifies a stream or river and affects fish or wildlife	Applicable, but not likely to be triggered
Hydraulic Code WAC 220-110	Demonstrate to the Department of Fisheries that the proposed action will not damage fish resources. Required information includes an overall project plan, complete plans and specifications for the proposed work within the ordinary high waterline and complete plans and specifications for protection of fish life.	Work within the ordinary high water limit of state waters that will use, direct, obstruct, or change the natural flow or bed of state waters	Not an ARAR
Shoreline Management Act of 1971 WAC 173-22	Compliance with City of Bainbridge Island Master Program	Action within 200 feet of a shoreline or affecting an associated wetland within the City of Bainbridge	Not an ARAR
Miscellaneous			
WAC 173-303	State Dangerous Waste Regulations	Minimize contamination	Applicable
WAC 173-304	Minimal Functional Standards for Landfills	Minimize contamination	Applicable
Bainbridge Island Municipal Code Ordinance 98-20	City of Bainbridge Island Critical Areas Ordinance	Identified as critical areas	Applicable, but not likely to be triggered.

TABLE 4
BAINBRIDGE ISLAND LANDFILL CAP
 Potential Action-Specific ARARs

Citation	Requirement	Prerequisite	Designation	Comments
General Requirements for Cleanup Actions				
WAC 197-11 SEPA	Determine whether there is a significant adverse environmental impact.	Coordination of SEPA and MTCA.	Applicable	Ecology Policy 130A addresses coordination of MTCA and SEPA.
Institutional Controls				
WAC 173-340-440 MTCA	Institutional controls and financial assurances.	Residual concentrations of hazardous substances exceed MTCA Method A or B cleanup levels; containment as part of the cleanup actions.	Applicable	Will require institutional controls described in restrictive deed covenants and some form of financial assurance.
WAC 173-160-171(a)(iii)	Water-supply wells shall not be located within 1,000 feet of solid waste landfills.	Application for permit to install a water supply well within 1,000 feet of landfill.	Applicable	Will require enforcement by Ecology.
Monitoring				
WAC 296-62 29 CFR 1910.120	Occupational health standards for workers on hazardous waste sites.	Personnel working (e.g., sampling or conducting remedial actions) at the site.	Applicable	Washington’s training requirements are more stringent than federal requirements.
WAC 173-160	Must comply with well construction standards	New wells are installed at the site.	Applicable	
WAC 173-340-410	Compliance monitoring plan must be prepared to meet MTCA requirements	Required for cleanup actions under MTCA	Applicable	Will require development of a compliance monitoring plan and approval by Ecology.
WAC 173-304-460(3)(g)(ii)	Groundwater monitoring plan must be prepared per WAC 173-304-490.	Required for landfill design and operation	Applicable	
Collection and Containment				
Federal Executive Order 11988, Protection of Floodplains (40 CFR 6, Appendix A)	Must take action to avoid adverse effects, minimize potential harm, restore and preserve natural and beneficial values of the floodplain.	Construction of collection or containment facilities in the floodplain.	Not applicable	Not within 100-year flood plain.

TABLE 4
BAINBRIDGE ISLAND LANDFILL CAP
Potential Action-Specific ARARs

Citation	Requirement	Prerequisite	Designation	Comments
Federal Executive Order 11990, Protection of Wetlands (40 CFR 6, Appendix A)	Take action to minimize the destruction, loss, or degradation of wetlands.	Construction of collection or containment facilities impacts adjacent wetlands.	Not applicable	Not within 200 feet of a designated wetland
Federal Clean Water Act Section 404	Take action to avoid or minimize the destruction, loss, or degradation of wetlands and surface water bodies.	Disposal of fill material excavated during construction of collection or containment facilities into adjacent wetlands.	Not applicable	Not within 200 feet of a designated wetland
Shoreline Management Act of 1971	Compliance with City of Bainbridge Island Shoreline Master Program.	Construction of collection or containment facilities occurs within 200 feet of a shoreline or affects an associated wetland.	Not Applicable	Not within 200 feet of a shoreline or affect on associated wetland.
State Waste Discharge General Permit Program WAC 173-226	Construction activities must have an erosion and sediment control plan, procedures for control of other pollutants, and compliance with other local requirements.	Construction activities disturb more than 5 acres.	Applicable	Remedial actions conducted under an agreed order or consent decree are exempt from procedural requirements (RCW 70.105D.90).
State Minimal Functional Standards for Landfill WAC 173-304-460	Functional standards for design of cover systems, leachate collection systems, liners, closure, and gas control.	Construction of collection or containment facilities	Applicable	
Bainbridge-Kitsap County Health District Ordinance 1996-11			Applicable	
Puget Sound Clean Air Agency Regulations	Submit a Notice of Construction prior to constructing or modifying an air contaminant source.	Construction or modification of and air contaminant source.	Applicable	
	Does not cause injury to human health, plant or animal life, property, or does not interfere with enjoyment of life and property.	Emissions or odor and fugitive dust.		

TABLE 4
BAINBRIDGE ISLAND LANDFILL CAP
 Potential Action-Specific ARARs

Citation	Requirement	Prerequisite	Designation	Comments
Treatment and Disposal				
WAC 173-240	Submittal of plans and reports for construction of wastewater treatment facilities.	Preparation of plans and specifications and engineering report for agency approval.	Applicable	Remedial actions conducted under an agreed order or consent decree are exempt from procedural requirements (RCW 70.105D.90).
WAC 173-220 (90.48 RCW; Section 402 FWPCA 40 CFR 122)	NPDES Permit.	Application for and compliance with NPDES program.	Applicable	Remedial actions conducted under and agreed order or consent decree are exempt from procedural requirements (RCW 70.105D.90).
State Dangerous Waste Regulations WAC 173-303	Compliance required for the storage, transport, treatment, or disposal of federal hazardous or state dangerous wastes.	Treatment of contaminated groundwater generates residual solids that designate as federal hazardous or state dangerous wastes.	Applicable	May occur if treatment of groundwater concentrates contaminants.
City of Bainbridge Island Building Permit Requirements	Permits are required for construction of new structures or modifications to existing structures.	Treatment or disposal facilities require construction of new structures.	Applicable	Likely to be required for construction of treatment plant.
Bainbridge-Kitsap County Health District Ordinance 1996-11	All structures within 1,000 feet of a landfill must be protected from landfill gas migration	Located within 1,000 feet of property line	Applicable	Engineer's report certifying that gas generated is below lower explosive limit
Puget Sound Clean Air Agency Regulations	Submit a Notice of Construction prior to constructing or modifying an air contaminant source. Does not cause injury to human health, plant or animal life, property, or does not interfere with enjoyment of life and property.	Construction or modification of and air contaminant source. Emissions or odor and fugitive dust.	Applicable	